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UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 CFR § 1.53(b))	Attorney Docket No.	2400-505
	First Inventor or Application Identifier	Leatherman et al.
	Title	INTERNET CAPABLE BROWSER DISPENSER ARCHITECTURE
	Express Mail Label No.	EL527471611US

APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents.	ADDRESS TO: Assistant Commissioner for Patents Box Patent Application Washington, DC 20231
<p>1. <input checked="" type="checkbox"/> *Fee Transmittal Form (e.g., PTO/SB/17) (Submit an original and a duplicate for fee processing)</p> <p>2. <input checked="" type="checkbox"/> Specification [Total Pages 17] (preferred arrangement set forth below) — Descriptive title to the invention — Cross References to Related Applications — Statement Regarding Fed sponsored R & D — Reference to Microfiche Appendix — Background of the invention — Brief Summary of the invention — Brief Description of the Drawings (if filed) — Detailed Description — Claim(s) — Abstract of the Disclosure</p> <p>3. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets 2]</p> <p>4. <input checked="" type="checkbox"/> Oath or Declaration [Total Pages 1] a. <input type="checkbox"/> Newly executed (original or copy) b. <input checked="" type="checkbox"/> Copy from a prior application (37 C.F.R. § 1.63(d)) (for continuation/divisional with Box 17 completed) [Note Box 5 below] i. <input type="checkbox"/> DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).</p> <p>5. <input type="checkbox"/> Incorporation By Reference (useable if Box 4b is checked) The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.</p>	<p>6. <input type="checkbox"/> Microfiche Computer Program (Appendix)</p> <p>7. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Copy b. <input type="checkbox"/> Paper Copy (identical to computer copy) c. <input type="checkbox"/> Statement verifying identity of above copies</p> <p>ACCOMPANYING APPLICATION PARTS</p> <p>8. <input checked="" type="checkbox"/> Assignment Papers (cover sheet & document(s))</p> <p>9. <input checked="" type="checkbox"/> 37 C.F.R. § 3.73(b) Statement <input checked="" type="checkbox"/> Power of Attorney (when there is an assignee)</p> <p>10. <input type="checkbox"/> English Translation Document (if applicable)</p> <p>11. <input type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations</p> <p>12. <input checked="" type="checkbox"/> Preliminary Amendment</p> <p>13. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) (Should be specifically itemized)</p> <p>14. <input type="checkbox"/> *Small Entity <input type="checkbox"/> Statement filed in prior application, Status still proper and desired</p> <p>15. <input type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed)</p> <p>16. <input type="checkbox"/> Other: _____</p> <p>*NOTE FOR ITEMS 1 & 14: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).</p>

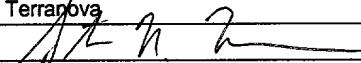
17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information below and in a preliminary statement:

<input type="checkbox"/> Continuation	<input checked="" type="checkbox"/> Divisional	<input type="checkbox"/> Continuation-in-part (CIP)	of prior application No: <u>08 /896,988</u>
Prior application information:		Examiner: Michael Butler	Group/Art Unit: 3651

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		ZIP CODE	27602
		FAX	919-854-2084

Name (Print/Type)	Steven N. Terranova	Registration No. (Attorney/Agent)	43,185
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Leatherman et al.

Divisional application of Serial No. 08/896,988, Filed July 18, 1997

Examiner: M. Butler

Art Unit: 3651

For: **INTERNET CAPABLE BROWSER DISPENSER ARCHITECTURE**

Assistant Commissioner for Patents

Washington, DC 20231

Sir:

PRELIMINARY AMENDMENT

Please consider the following amendments prior to considering the associated divisional application. If any fees in addition to those associated with the application are required, the Commissioner is hereby authorized to charge the to Deposit Account 18-1167 and consider this a petition therefor.

In the Claims:

Please cancel Claims 1-28, 45-48, and 36-44 without prejudice. Claims 29-35 and 49-55 remain in this present divisional application. Claims 1-27 were prosecuted in the parent case and were allowed by the Examiner in a Notice of Allowance mailed on December 21, 1999.

Remarks

Applicant respectfully requests consideration of this divisional application. For background and clarification purposes, the application as originally submitted on July 18, 1997 included Claims 1-35. A preliminary amendment (enclosed) was submitted on October 24, 1997 adding Claims 26-55. On March 16, 1999, Applicant submitted a response to restriction requirement electing Group I consisting of Claims 1-27 in response to a restriction requirement set forth in the Office Action mailed on March 10,

Figure 1 consists of 12 sub-graphs, labeled (a) through (l), each showing the time course of a different physiological parameter over a 10-minute period. The x-axis for all graphs is 'Time (min)' ranging from 0 to 10. The y-axis represents the parameter value. The parameters are: (a) HR (b/min), (b) BP (mmHg), (c) SV (ml), (d) CO (l/min), (e) SVR (mmHg/l/min), (f) PVR (mmHg/l/min), (g) PPA (mmHg), (h) PVP (mmHg), (i) PVP/PPA, (j) PVP/PPA, (k) PVP/PPA, and (l) PVP/PPA. The graphs show various trends, including increases, decreases, and stable values over time.

Respectfully submitted,

Date of Signature /

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Russel D. Leatherman et al.

Examiner: TBA

Serial No. 08/896,988

Art Unit: TBA

Filed: July 18, 1997

For: **INTERNET CAPABLE BROWSER DISPENSER ARCHITECTURE**

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

PRELIMINARY AMENDMENT

Prior to examining this application, please amend it as shown. A check in the amount of \$686.00 is enclosed for the added claims. The Commissioner is hereby authorized to charge any additional fees which may be required to Deposit Account No. 18-1164.

In the Specification

On page 5, after line 10 please add:

--Fig 3 is an elevation view, partially broken away of a fuel dispenser according to the invention.--

On page 5, after line 18 please add:

--As seen in Figure 3, a fuel dispenser housing 12 is provided with conventional fuel supply line 128, metering device 130, outlet hose 134 and nozzle 136. The metering device 130 communicates data about the volume of fuel dispensed along line 132 to a transaction computer 140.---

In the Drawings

Please add new Figure 3, an informal copy of which is attached.

In the claims:

Please add new claims 36-55:

--36. An interactive fuel dispenser system comprising:

a housing, said housing including a controller, a display, an input device and a browser running on said controller to provide an interactive graphical user interface,

a fuel supply line,

a metering device,

an outlet hose, and

a nozzle to permit the dispensing of fuel, and

data sources for said browser which are hypertext mark-up language (HTML)

compliant to facilitate assembly on said display.

37. An interactive dispenser system as claimed in claim 36 wherein said data sources include a local server associated with a fuel station store including a server controller and associated software to provide local services to each said browser; and

said browser and said local server having network connections for connecting to a network including remote servers, said browser adapted to access local services from said local server by manipulation of said graphical user interface.

38. The interactive fuel dispensing system of Claim 36 wherein said browser and said local server use hypertext transfer protocol (HTTP).

39. The interactive fuel dispensing system of Claim 36 wherein said local server includes a link to a remote service provided by a remote server and said client is adapted to request said remote service by accessing said local server, which in turn accesses said remote server via said link.

40. The interactive fuel dispensing system of Claim 36 wherein each said local server includes a plurality of links to one or more servers, which provide a plurality of services, said client being configured to access said local server, which provides said links to said remote servers, wherein addresses of said servers and services are not required at said client.

41. The interactive fuel dispensing system of Claim 36 wherein said network is The Internet.

42. The interactive fuel dispensing system of Claim 37 wherein said local services provided by said local server interactively facilitate one or more of the group of services consisting of point-of-sale functions, advertising, merchandising, ordering products, ordering services, ordering food, providing local information, audio intercom and video intercom.

43. The interactive fuel dispensing system of Claim 36 wherein said dispenser housing has two fueling positions and each said fueling position has a separate dispenser controller.

44. The interactive fuel dispensing system of Claim 43 wherein each said fueling position of each said fuel dispenser further includes a microphone and speaker electronically associated with said controller and adapted to provide bi-directional voice communications between said fueling positions and a fuel station store via the network.

transmitting a service to the fueling position based on the customer response at the fueling position.

50. The method of Claim 49 wherein the delivery transfer and transmission are over the Internet.

51. The method of Claim 49 wherein the information displayed is advertising information.

52. The method of Claim 49 wherein the information displayed is one of the group consisting of news, weather, sports, traffic updates and maps.

53. The method of Claim 49 wherein the information displayed is merchandising information providing the customer an opportunity to select from one or more items displayed.

54. The method of Claim 49 wherein the information displayed is live video information of a person communicating with the customer to provide a video intercom.

55. The method of Claim 49 further including using hypertext markup language and hypertext transfer protocol to carryout the step of displaying, prompting, receiving, transferring and providing.--

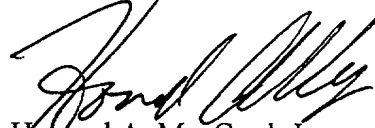
REMARKS

Applicant has presented herewith insertions to the specification, a new drawing and new claims for the purpose of assuring that the applicant is afforded the scope of protection warranted by the invention. The language and the drawing which are inserted in the specification are taken from U.S. Patent No. 5,543,849, column 5, lines 1 - 5 and Figure 5 of

that patent (a copy of which is enclosed). That patent is incorporated by reference in the present application at page 2, line 16, so that these additions do not amount to new matter.

Examination is awaited.

Respectfully submitted,



Howard A. MacCord, Jr.
Registration No. 28,639

Date: October 24, 1997

File No. 2400-127

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INTERNET CAPABLE BROWSER DISPENSER ARCHITECTURE

Background of the Invention

5 The invention relates generally to fuel dispensers and, more particularly, to fuel dispensers and dispensing systems providing interactive, multimedia functions to a customer. In recent years, fuel dispensers have become more than a means for fueling a vehicle. Service station owners are advertising at the dispenser with everything from simple signs to video displays running commercials. Some service stations have
10 integrated fast-food or quick-serve restaurants, and the dispensers have been converted into complex point-of-sale (POS) systems for ordering food from these restaurants. Additionally, the POS systems facilitate ordering other services, such as car washes, at the gas station. Most modern fuel dispensers include card readers or other payment means allowing payment for not only fuel, but also any products or services ordered at
15 the dispenser.

 As the amount of information and number of products and services provided to the consumer increases, dispenser suppliers need economical ways to provide information to the customer and market the fuel company's primary products and services. As the amount of information and number of products and services increase,
20 the number of ways to present such information to the customer increases exponentially. Each oil company and station operator wants to provide information and merchandise to their customers in different ways. Until applicants' invention, these companies and station operators were significantly limited in providing information and marketing goods and services at the dispenser.

25 A typical fuel dispensing system includes a plurality of fuel dispensers with two fueling positions per dispenser and a central site controller. Sophisticated dispenser systems incorporate expensive, hardware-intensive controllers in each dispenser. Many fueling positions may include a display and touch pad (or screen) to order goods or services. Until now, customer interactivity was limited to choosing an option presented
30 by the dispenser. Unfortunately, changing the various options or presentations for the customer involved changing firmware or downloading new software to each dispenser. With any software application, revisions are necessary and when revisions are made, every dispenser at every desired location must be upgraded.

from sources that are not directly related to the main service station store to take full advantage of the merchandising potential at the dispenser. There is also a need for an interactive fuel dispenser capable of providing a customer the opportunity to order foods, products and services from the local station store in addition to purchasing products or services, such as movie tickets, or downloading information such as news, weather, traffic updates or road maps from local or remote sites.

Summary of the Invention

Applicants' fulfill this need by providing an interactive fuel dispenser system having a plurality of fuel dispensers operating in conjunction with a local server. Each dispenser generally has two fueling positions, each with a graphical user interface through which a customer interacts. In contrast with the recent trend in turning fuel dispensers into super computers, applicants provide a dispenser architecture that need only be sufficient to establish interactivity with a server to create multimedia applications and carry out POS functions with a browser interface. Each fueling position acts as a client of a local server at the fuel station store. In the preferred embodiment, each fueling position client also may access remote servers connected to the same network in which the fueling position clients and the local server are connected. Preferably, this network is connected to the Worldwide Web of the Internet.

Each client (fueling position) may include a graphical interface and browser to perform interactive functions at the dispenser. The hardware at the dispenser and fueling position is preferably minimal and only sophisticated enough to establish interactivity with the fueling customer in order to minimize cost. Computer intensive services and functions may be provided at the local server or one of the remote servers. Typically, the browser at each fueling position simply requests services from one of the servers on the network to provide any type of function or service desired at the fueling position. Most notably, applicants' invention is not limited to simple "mass media" marketing with no interaction taking place between the customer and the advertising. The invention actively encourages merchandising at the fueling position. Interactive video/graphic advertising messages provide customers the ability to immediately react to the advertising or merchandising and purchase the products or services advertised, whether

local or remote. The dispensers may include card readers at each fueling position to receive payment for the goods or services at the same time payment is made for the fuel.

The invention provides a system for providing interactive video/graphic presentations to a customer and offering the customer selections for services and merchandise as desired. By minimizing the hardware and software commitment at each dispenser and providing services from local and remote servers, an interactive, multimedia system, which is easily updated and economically feasible, is made possible. Providing such remote services is virtually impossible to reproduce within the confines of a service station environment without applicants' invention.

In particular, the invention expands local advertising and its minimalist form of merchandising into an opportunity for sophisticated local and off-site advertising and merchandising ranging from ordering fast food and car washes to purchasing movie tickets or any other product or service desired. Remote products or services may be sent directly to the customers home. Another unique option provided by applicants' invention is an audio or audio/video intercom between the fueling position and one of the local or remote servers. The intercom provides an audible (and visual) interface between a station operator or other individual. The intercom is especially useful with order entry.

The invention is preferably implemented in a dispenser having a processor, operating system and graphical user interface running a hypertext transfer protocol (HTTP) compliant browser. Each fueling station at each dispenser allows a customer to browse the Worldwide Web of the Internet to the extent desired by the station operator. In short, the fueling position acts as a hypertext markup language (HTML) compliant client with a graphical user interface and browser.

HTTP is a known application protocol that provides users access to files using the standard page description language known as HTML. The HTTP provides tremendous flexibility in accessing files in and including different formats, such as text, graphics, images, sound and video. HTML provides basic document formatting and allows a developer to specify "links" to and between any combination of local and remote servers as well as files therein. Use of a HTML compliant client browser involves specification of a link via a uniform resource locator (URL). Once a link is specified, the client makes a request to the identified server and receives a document formatted according to HTML.

These documents are often referred to as "web pages". For more details on HTML and its specific implementation, the HTML Reference Manual, published by Sandia National Laboratories and available on the Internet at http://www.sandia.gov/sci_compute/html.ref.html, is incorporated herein by reference.

5

Brief Description of the Drawings

FIGURE 1 is a diagram of a fuel station store having dispensers and a local station server connected to the Internet according to the present invention.

FIGURE 2 is a schematic of the fuel dispensing system architecture of the system of Figure 1.

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Detailed Description of the Preferred Embodiment

Referring now to the drawings in general, and Figure 1 in particular, it will be understood that the illustrations are provided to describe a preferred embodiment of the invention and are not intended to limit the invention thereto. A fuel station environment 10 is shown having a plurality of fuel dispensers 12. Each dispenser 12 typically has at least two fueling positions 14 capable of delivering fuel and providing a point-of-sale (POS) interface.

15

The dispensers include the normal fuel delivery hardware required to deliver fuel to a customer in a controlled manner, such as pumps, flow control valves, nozzles, hoses and control electronics. A main service station store 16 is operably connected to each dispenser 12 and fueling position 14 in addition to a local station server and control system 18. The server and control system 18 are operationally associated with POS systems and/or transaction systems for a convenience store 20 and one or more quick service restaurants 22, an associated car wash 24 or other service provider. In the preferred embodiment, a customer at any of the fueling positions 14 of any of the dispensers 12 may access the local station server 18 or any number of remote servers 26, which are located outside of the fuel station environment 10, via the Internet or similar network 30. The dispenser may have a direct Internet connection and/or a direct interactive connection to the local server 18.

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Turning now to Figure 2, a fueling position 14 for each dispenser 12 is shown in greater detail. Each fueling position is associated with a controller 32, operating system 34, browser 36, display 38 and input device 40, such as a keyboard, touch pad or touch screen. The display 38 and input device 40 in conjunction with the controller 32, provide a graphical user interface for each fueling position 14. The operating system 34 is adapted to run any number of software applications required to operate the dispenser, graphical user interface and the network browser 36. In more advanced embodiments, each fueling position 14 may include a payment accepting device 42, such as a magnetic strip card reader, smart card reader, or currency acceptor, in addition to a microphone 44 and camera 46 to provide an audio or audio/video intercom with a similarly equipped server or system. Other payment systems may be substituted.

Each graphical user interface may include its own control system or operate in conjunction with a single control system adapted to operate both interfaces on a single dispenser 12. In a preferred configuration of the invention, each fueling position 14 acts as a thin client capable of interacting with a network of servers. The controller 32 and associated user interfaces are preferably designed to minimize the hardware commitment necessary at each dispenser, while having sufficient capability to establish interactivity with the user and provide fuel dispenser control. Most computer intensive functions are provided as services from the various local and remote servers 18, 26. Merchandising and business rule interpretation are handled in the systems nomenclature as services. Although certain functions and services may be run at the dispenser, most functions dealing with customer transactions, information dissemination and advertising or merchandising are preferably performed as services performed remotely and accessed by a client (fueling position). The browser software for each client has the ability to request services either locally or remotely, via the Internet or similar network. Certain services may be automatically requested by the browser at each client, while others await responses by a customer.

The local server and control system 18 will preferably include or be associated with a central operator controller 50. The operator controller 50 may act as the local server 18 or, in the alternative, may operate in association with a separate local server 18. The controller 50 is typically a central site controller used to interface and control pump

operation, certain dispenser and store transactions as well as general control of the fuel station store. The controller 50 may also facilitate station operator interaction with the client through an operator display 52 and operator input 54. The local server preferably controls interactivity with the network 30 and/or the dispensers 12.

5 The audio or audio/video intercom system may include an operator microphone 56 and camera 60. Thus, a station operator may interact with a customer with a combination of text, graphics or audio/video intercom. The controller 50 may include audio and video signal processing capabilities for intercom functions. Furthermore, an auxiliary media source 62 associated with the local server 18 may provide video
10 advertisements, interactive merchandising and promotion, as well as interactive information dissemination. The media source 62 may include media sources such as CDs, laser discs, DVDs (digital video disc), streamed audio or video over the Internet or any other suitable media source. Notably, all of the activities may also be provided remotely through network 30.

15 The basic system architecture is a network connecting the dispensers 12 and the local station server 18. Each fueling position 14 is treated as a client capable of accessing services provided by the local server 18. Interactivity between the fueling positions 14 and the local station server 18 is accomplished in a manner similar to the way interactivity is accomplished on the Internet, and preferably, identical to the manner
20 in which interactivity is accomplished on the Internet. The system preferably uses HTML and HTML compliant components, media players and services. For local services, each client uses the respective browser 36 to request services from the local station server 18. The graphical user interface is configured to provide easy operation and allow customers to intuitively select the various options presented and receive
25 information, products or services accordingly. The requested services will control the dispenser and its display content as desired and will react to further customer actions to facilitate interactivity. For external services, the client connects to remote services outside the local service station 10 using the same browser interface.

 When accessing remote servers on the Internet, the system architecture uses the
30 hypertext mark-up language (HTML). The Internet is a known computer network based on the client-server model. Basically, the Internet comprises a large network of servers

accessible by clients. Each of the clients operates a browser, which is a known software tool used to access servers through Internet access providers. A server operates a “web site” which supports files in the form of documents and pages. A network path to a server is identified by a uniform resource locator (URL) having a known syntax for
5 defining a network connection.

The Worldwide Web is that collection of servers of the Internet that utilize the hypertext transfer protocol (HTTP). HTTP is a known application protocol that provides users access to files, which can be in different formats such as text, graphics, images, sound and video, using a standard page description language known as hypertext mark-
10 up language (HTML). HTML provides basic document formatting and allows the developer to specify links to other servers and files therein. Use of an HTML compliant client browser involves specification of a link via the URL. Upon such specification, the client makes a request to the server identified in the link and receives a web page, basically, a document formatted according to HTML, in return. HTML provides
15 exceptional freedom in creating graphics/text/graphic images and associated audio between servers and clients. HTTP and HTML allow complex services to be accessed by clients having a minimum amount of hardware sophistication. The primary computational horsepower is reserved for the servers providing the requested services.

With the described embodiment, making interactive video/graphic presentations
20 to a customer and offering the customer selections for services and merchandise is possible without extensive computational power at each dispenser and fueling position. When the network connecting the local server 18 with the dispensers 12 is connected to a larger network 30, such as the Internet, a tremendous increase in the number of services and functions provided to the customers is provided. The customer may interact with
25 services outside of the local environment as well as increase the functionality of the local environment. Local services are enhanced by making it easier to provide local advertising and merchandising at each fueling position 14. These services are easily customized by those familiar with HTTP and HTML.

Enhanced graphics and customer interaction need only be provided to the local
30 server 18, and customers at each fueling position 14 may access the information through the browser 36. Downloading or updating each fueling position is no longer required.

The Internet will provide world wide access to services, such as advertising and merchandising, that would be too costly or impossible to reproduce within the confines of traditional service stations. Local station operators are no longer required to physically incorporate advertising or merchandising within their systems. The local system operator need only provide links to Internet services providing merchandising, advertising or information as desired. Notably, upgrades to the client's software are available online from a remote server or the host.

Preferably, almost all local functions are provided as services by either the local server 18 or one of the remote servers 26. Even the local server 18 may be remote from the dispensers or fueling environment. Local services may include such activities as dispenser pumping and transaction control and order entry of fast food and audio/video displays. Literally hundreds of sites may have fueling operations and numerous other functions running on a remote server. Major fuel companies may provide customized or generic services for each fuel station through the Internet or by periodically releasing information or services on a medium for use with the auxiliary media source 62, such as a periodically released CD or DVD. Additionally, local stations may customize their own services and information dissemination capabilities using similar techniques. For example, local stations may contract with a web page designer to develop a web page which is automatically accessed at the beginning of or during a fueling transaction. Additionally, actual transaction programs may be run on remote servers controlling hundreds of sites having compatible dispensers. Although adapting the dispenser to be a thin client is preferred, a more hardware and software intensive "fat client" may be used with the system and benefit from connectivity to the various local and remote services.

In operation, the graphical user interface can provide the customer with a variety of advertising or information. To facilitate merchandising, the customer is provided the opportunity to order or receive more information about various products or services offered to them by the local server or any number of remote servers. With respect to local services, the customer may order various goods or products in the station store or at one of the restaurants within the station store. Similarly, services outside the station but within the local fueling environment, such as car washes, may be ordered. At any time throughout the fueling operation, advertising may be presented to the customer that

encourages the customer to order the goods or services being advertised. Furthermore, local information may be provided to the customer as desired. The customer is provided multiple choices in which to select goods, services or information as desired.

With regard to remote services, local customers may be given the opportunity to
5 order goods or services unavailable at the local station store, such as movie tickets. This is particularly useful for dispensers equipped with printers that can print the movie ticket or other printed items. Furthermore, the customer may download information, such as the weather, traffic conditions, news reports or local maps. Having access to remote services also allows the station owner to run remote advertising campaigns at each
10 fueling position. For example, the browser at each client may automatically access one of these remote servers or preferably, the client may be configured to automatically access the local server 18 which provides a link to the desired remote services. Accessing the local server 18 and linking to remote services minimizes the amount of customization required at each dispenser and fueling position.

15 Certain modifications and improvements will occur to those skilled in the art upon reading the foregoing description. It should be understood that applicants' invention provides a fuel delivery system architecture where each fueling position is viewed as a client having a graphical user interface capable of accessing services from a local station server, and preferably, remote network servers as well. Although the system
20 is not limited to the Internet and HTML-compliant systems, the architecture depends on minimizing the hardware commitment at each client while providing high quality audio/video/graphic interfaces at these clients using a server capable of carrying the primary computational load. It should be understood that all modifications and improvements to the disclosed system have been deleted herein for the sake of
25 conciseness and readability, but are properly within the scope of the accompanying claims.

We Claim:

1. An interactive fuel dispensing system comprising:
 - a plurality of fuel dispensers having at least one fueling position, each position
 - 5 including a thin client comprising a dispenser controller, a display, an input device and a browser running on said controller to provide an interactive graphical user interface;
 - a local server associated with a fuel station store including a server controller and associated software to provide local services to each said thin client; and
 - each said thin client and said local server having network connections for
 - 10 connecting to a network including remote servers, each said thin client adapted to access local services from said local server and remote services from the remote servers by manipulation of said graphical user interface.
2. The interactive fuel dispensing system of Claim 1 wherein certain of said services are
- 15 automatically accessed by said client.
3. The interactive fuel dispensing system of Claim 1 wherein certain said services are accessed by said client when prompted by a customer.
- 20 4. The interactive fuel dispensing system of Claim 1 wherein each said thin client, said local server and the remote servers use hypertext transfer protocol (HTTP).
5. The interactive fuel dispensing system of Claim 1 wherein said thin client and said local server use hypertext mark-up language (HTML) software and hypertext transfer
- 25 protocol (HTTP) to provide interactivity and access to the local and remote services.
6. The interactive fuel dispensing system of Claim 1 wherein components of each said thin client are hypertext mark-up language (HTML) compliant.
- 30 7. The interactive fuel dispensing system of Claim 1 wherein said local server includes a link to a remote service provided by a remote server and said client is adapted to request

said remote service by accessing said local server, which in turn accesses said remote server via said link.

5 8. The interactive fuel dispensing system of Claim 1 wherein each said local server includes a plurality of links to one or more servers, which provide a plurality of services, said client being configured to access said local server, which provides said links to said remote servers, wherein addresses of said servers and services are not required at each said client.

10 9. The interactive fuel dispensing system of Claim 1 wherein said clients are configured to directly access once of the remote services provided by one of the remote servers.

15 10. The interactive fuel dispensing system of Claim 1 wherein said network is The Internet.

20 11. The interactive fuel dispensing system of Claim 1 wherein said dispenser controller operates said graphical user interface and facilitates interactivity with a customer to access the local and remote services, and computer intensive functions at each fueling position are provided as services from said local server or one of the remote servers on the network.

25 12. The interactive fuel dispensing system of Claim 1 wherein said dispenser controller provides interactivity at said client and relies on said local server and the remote servers to carry out computer intensive functions associated with the services.

30 13. The interactive fuel dispensing system of Claim 1 wherein said local services provided by said local server interactively facilitate one or more of the group of services consisting of point-of-sale functions, advertising, merchandising, ordering products, ordering services, ordering food, providing local information, audio intercom and video intercom.

14. The interactive fuel dispensing system of Claim 1 wherein said remote services provided by the remote servers interactively facilitate one or more of the group of services consisting of point-of-sale functions, advertising, merchandising, ordering products, ordering services, providing remote information, audio intercom and video
5 intercom.

15. The interactive fuel dispensing system of Claim 1 wherein each said fueling position in one said fuel dispenser shares one dispenser controller with another fueling position in said fuel dispenser.
10

16. The interactive fuel dispensing system of Claim 1 wherein each said fueling position has a separate dispenser controller.

17. The interactive fuel dispensing system of Claim 1 wherein each said fueling position of each said fuel dispenser further includes a card reader for facilitating payment for products or services.
15

18. The interactive fuel dispensing system of Claim 1 wherein each said fueling position of each said fuel dispenser further includes a microphone and speaker electronically
20 associated with said controller and adapted to provide bi-directional voice communications between said fueling positions and a fuel station store via the network.

19. The interactive fuel dispensing system of Claim 18 wherein said controller includes an audio signal processor and provides said bi-directional audio communications to said
25 local server located in the fuel station store via the network.

20. The interactive fuel dispensing system of Claim 19 wherein each said fueling positions of each said fuel dispenser includes a camera and said local server includes a camera and display wherein video signals are transmitted between said fueling position
30 and said local server to provide a video intercom via the network.

21. An interactive fuel dispensing system comprising:

a plurality of fuel dispensers having a controller and a plurality of fueling positions each having a display, an input device and a software browser operatively associated with said controller to form a graphical user interface at each fueling position,
5 each said graphical user interface being a client and connected to a network of remote servers;

a local server connected to the network and being one of the remote servers;
said local server adapted to provide local services to said clients when accessed;
each said client adapted to access said local server to receive the local services

10 and access at least one remote server in the network to receive remote services;

the local and remote services being selectable by a customer with said input device, accessed via said browser, received by said controller and displayed to the customer on said display; and

whereby the customer is provided an interface at one said fueling position capable
15 of interactively accessing local and remote services.

22. An interactive fuel dispensing system with Internet access comprising:

a plurality of fuel dispensers having multiple fueling positions, each fueling position being a thin client including a graphical user interface and a browser having a
20 connection to the Internet;

a local server located within a fuel station store and having a connection to the Internet;

said local server adapted to interactively provide local services to said clients through the Internet when accessed by one of said clients; and

25 each of said clients adapted to interactively request local services provided by said local server and remote services provided by remote servers on the Internet via said browser;

whereby the customer is provided an interface at the fueling position capable of interactively accessing local and remote services.

30

23. An interactive fuel dispenser having Internet access comprising two fueling positions, each said position configured to act as a thin client and including a graphical user interface and a browser having a connection to the Internet, each said client adapted to interactively request local services provided by a local server in a fuel station store and remote services provided by at least one remote server, said graphical user interface providing a customer access to local or remote services as desired, whereby the customer is provided an interface at the fueling position capable of interactively accessing local and remote services.

24. An interactive multimedia fuel dispenser for providing multimedia application comprising a control system, a display, an input device and a network connection for connecting to a local server providing interactive services to provide a graphical user interface, said control system including a hypertext mark-up language (HTML) browser for accessing services provided by a local server connected to connected network using hypertext transfer protocol (HTTP).

25. The interactive multimedia dispenser of Claim 24 wherein said services provide for pump operation.

26. The interactive multimedia dispenser of Claim 24 wherein said services provide for display content.

27. The interactive multimedia dispenser of Claim 24 wherein said services provide for customer interactivity with one or more of the group consisting of point-of-sale functions, advertising, merchandising, ordering products, ordering services, ordering food, providing local information, audio intercom and video intercom.

28. The interactive multimedia dispenser of Claim 24 wherein said graphical user interface and browser are adapted to access services from a local server to provide interactive presentations to a customer.

29. A method of providing an interactive fueling operation comprising:

providing an interactive graphical user interface at a fueling position on a fuel dispenser;

5 displaying information to a customer at the graphical user interface from a server spaced from the fuel dispenser, by delivery over a network;

prompting a customer to select a service with the displayed information;

receiving a response from the customer identifying a selected service to be provided by the server;

10 transferring the response from the dispenser to the server over the network; and transmitting a service from the server over the network to the fueling position based on the customer response at the fueling position.

30. The method of Claim 29 wherein the delivery transfer and transmission are over the Internet.

15 31. The method of Claim 29 wherein the information displayed is advertising information.

32. The method of Claim 29 wherein the information displayed is one of the group consisting of news, weather, sports, traffic updates and maps.

20 33. The method of Claim 29 wherein the information displayed is merchandising information providing the customer an opportunity to select from one or more items displayed.

25 34. The method of Claim 29 wherein the information displayed is live video information of a person communicating with the customer to provide a video intercom.

30 35. The method of Claim 29 further including using hypertext markup language and hypertext transfer protocol to carryout the step of displaying, prompting, receiving, transferring and providing.

Abstract

The invention relates to an interactive fuel dispenser system having a plurality of fuel dispensers operating in conjunction with a local server. Each dispenser generally has two fueling positions, each with a graphical user interface through which a customer
5 interacts. In contrast with the recent trend in turning fuel dispensers into super computers, applicants' provide a dispenser architecture that need only be sufficient to establish interactivity with a server to create multimedia applications and carry out POS functions with a browser interface. Each fueling position acts as a client of a local server at the fuel station store. In the preferred embodiment, each fueling position client also
10 may access remote servers connected to the same network in which the fueling position clients and the local server are connected. Preferably, this network is or is connected to the Worldwide Web of the Internet.



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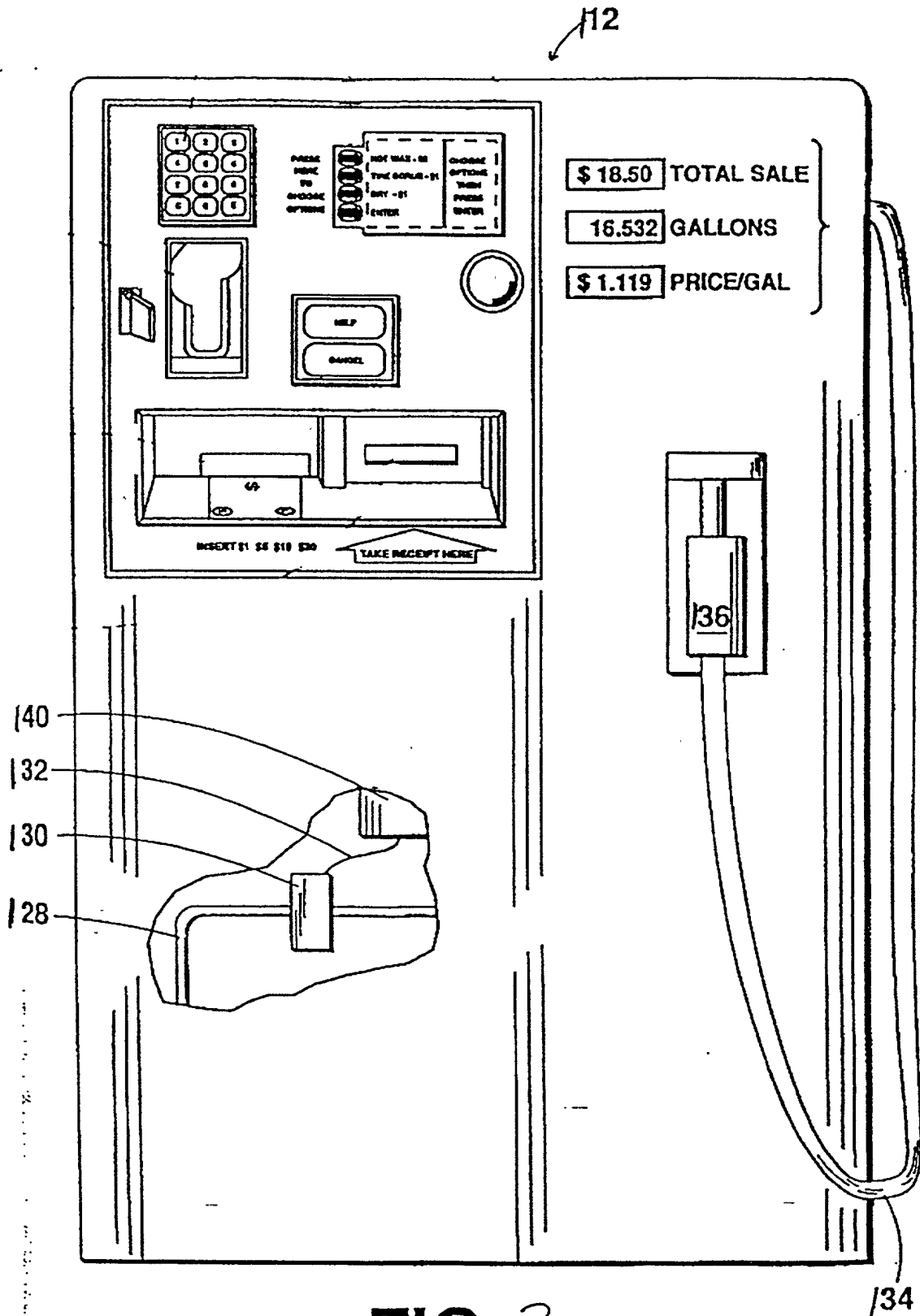


FIG. 3

RULE 63 (37 C.F.R. 1.63)
DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention INTERNET CAPABLE BROWSER DISPENSER ARCHITECTURE the specification of which (check applicable box(es)):

- ☒ is attached hereto.
☐ was filed on _____ as U.S. Application Serial No. _____
☐ was filed as PCT international application No. PCT/_____/_____ on _____ and (if applicable to U.S. or PCT application) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the examination of this application in accordance with 37 C.F.R. 1.56(a). I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed or, if no priority is claimed, before the filing date of this application:

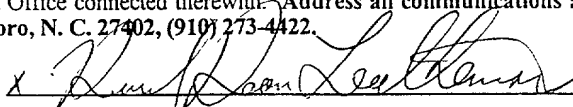
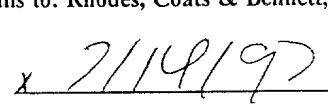
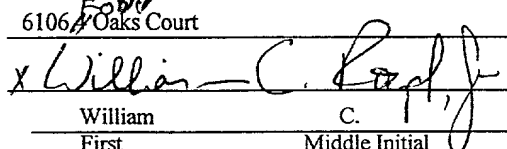
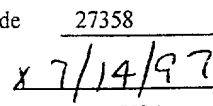
Prior Foreign Application(s): Application Number	Country	Day/Month/Year Filed
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I hereby claim the benefit under 35 U.S.C. 120/365 of all prior United States and PCT international applications listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in such prior application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. 1.56(a) which occurred between the filing date of the prior applications and the national or PCT international filing date of this application:

Prior U.S./PCT Application(s): Application Serial No.	Date/Month/Year Filed	Status: patented, pending, abandoned
----------------------------------------------------------	-----------------------	-----------------------------------------

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint the firm of Rhodes, Coats & Bennett, comprising C. Robert Rhodes, Registration No. 24,200; Edward W. Rilee, Jr., Registration No. 31,869; Howard A. MacCord, Jr., Registration No. 28,639; Jack B. Hicks, Registration No. 34,180; William J. Mason, Registration No. 22,948; David D. Beatty, Registration No. 38,071; Larry L. Coats, Registration No. 25,620; David E. Bennett, Registration No. 32,194; James L. Lester, Registration No. 38,721; Clinton H. Hallman, Jr., Registration No. 38,480; Gilbert J. Andia, Jr., Registration No. 38,815, and Benjamin S. Withrow, Registration No. 40,876, as my attorneys and/or agents with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent Office connected therewith. Address all communications and telephone calls to: Rhodes, Coats & Bennett, L.L.P., P.O. Box 2974, Greensboro, N. C. 27402, (910) 273-4422.

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Inventor's Name (typed)	William	C.	Royal, Jr.	USA	
	First	Middle Initial	Family Name	Citizenship	
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3) Inventor's Signature	_____			Date	_____
Inventor's Name (typed)	_____	_____	_____	_____	
	First	Middle Initial	Family Name	Citizenship	
Residence (City)	_____			(State/Foreign Country)	_____
Post Office Address	_____			Zip Code	_____

FOR ADDITIONAL INVENTORS, check box ☐ and attach sheet with same information and signature and date for each.

Rev. (1/96)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Leatherman et al.

For: INTERNET CAPABLE BROWSER DISPENSER ARCHITECTURE

Filed: 7/18/97

Serial Number: 08/896,988

Assistant Commissioner for Patents

Washington, D.C. 20231

NEW POWER OF ATTORNEY AND
REVOCATION OF PRIOR POWERS
FOR THE IDENTIFIED APPLICATION

Sir:

The undersigned, assignee of the entire interest in and to an application of Leatherman et al. for U.S. Letters Patent INTERNET CAPABLE BROWSER DISPENSER ARCHITECTURE, serial number 08/896,988, filed 7/18/97, by an assignment document recorded in the Patent and Trademark Office on 7/18/97, reel number 8705, frame 0318, hereby revokes all powers of attorney previously given and appoints the firm of Coats & Bennett, P.L.L.C., comprising Larry L. Coats, Reg. No. 25,620, David E. Bennett, Reg. No. 32,194, Benjamin S. Withrow, Reg. No. 40,876, John R. Owen, Reg. No. 42,055, David D. Kalish, Reg. No. 42,706, and Taylor Davenport, Reg. No. 42,466 as its attorneys and/or agents with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith.

Furthermore, in accordance with 37 CFR §3.73(b), the undersigned hereby states that the documentary evidence of a chain of title from the original owner to the assignee has been reviewed and the undersigned certifies that, to the best of assignee's knowledge and belief, title is

00000004-0000560

[illegible]

BY: Charles E. Carlson
Charles E. Carlson
Vice President, Secretary and
General Counsel

New File No: 2400-127

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Leatherman *et al.*

For: **INTERNET CAPABLE BROWSER DISPENSER ARCHITECTURE**

Divisional application filed concurrently herewith.

Serial Number to be assigned.

Assistant Commissioner for Patents

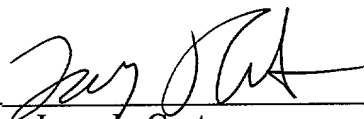
Washington, D.C. 20231

APPOINTMENT OF ASSOCIATE ATTORNEY

Sir:

The undersigned attorney of record, Larry L. Coats, Reg. No. 42,466, for **INTERNET CAPABLE BROWSER DISPENSER ARCHITECTURE**, serial number 08/896,988, divisional application filed concurrently herewith, hereby appoints Steven N. Terranova, Reg. No. 43,185, as an associate attorney under 37 CFR § 1.34 with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith.

PLEASE ADDRESS ALL COMMUNICATIONS AND TELEPHONE CALLS TO:
COATS & BENNETT, P.L.L.C., POST OFFICE BOX 5, RALEIGH, NORTH
CAROLINA 27602 (919) 854-1844.

BY: 
Larry L. Coats
Attorney of Record

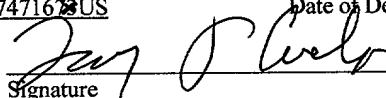
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Date: 2/8/2000

CERTIFICATE OF EXPRESS MAILING

I HEREBY CERTIFY THAT THIS DOCUMENT IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE "EXPRESS MAIL POST OFFICE TO ADDRESSEE" SERVICE UNDER 37 C.F.R. 1.10 ON THE DATE INDICATED ABOVE AND IS ADDRESSED TO BOX PATENT APPLICATION, ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231. EXPRESS MAIL LABEL NO.: EL52747162US Date of Deposit: 2/8/2000

LARRY L COATS
Name of Depositor


Signature

2/8/2000
Date of Signature

Variable	Mean	SD	Min	Max
Age	34.5	10.2	18	65
Gender	0.5	0.5	0	1
Marital Status	0.3	0.5	0	1
Education	12.5	1.5	9	16
Income	1500	500	500	3000
Health Status	0.7	0.4	0	1
Employment Status	0.6	0.5	0	1
Stress Level	4.5	1.5	1	7
Life Satisfaction	5.5	1.5	1	7
Resilience Score	3.5	1.5	1	7
Optimism Level	4.0	1.5	1	7
Gratitude Score	3.0	1.5	1	7
Self-Esteem	4.5	1.5	1	7
Emotional Stability	5.0	1.5	1	7
Life Purpose	4.0	1.5	1	7
Meaning in Life	4.5	1.5	1	7
Existential Well-being	4.0	1.5	1	7
Overall Well-being	4.5	1.5	1	7

Sir:

Mailed By:

Jennifer J. Rush

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